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PHYSICS AND ASTRONOMY CLASSIFICATION SCHEME (PACS)

Shortened version for use in classifying papers for Applied Physics

General

- 02 Mathematical methods in physics
- 06 Measurement science and metrology
- 07 Specific instrumentation
 - 07.60 Optical instruments and techniques, detection of radiation
 - 07.65 Optical spectroscopy and spectrometers
 - 07.75 Mass spectrometers and mass-spectroscopy techniques
 - 07.80 Electron and ion microscopes and spectrometers; techniques
 - 07.85 X-ray and gamma-ray instruments and techniques

Atomic and molecular physics

- 32 Atomic spectra and interactions with photons
- 33 Molecular spectra and interactions of molecules with photons
- 34 Atomic and molecular collision processes and interactions
- 35 Experimentally derived information on atoms and molecules
- 36 Studies of special atoms and molecules (macro- and polymer molecules, clusters)

Fundamental areas of phenomenology (including applications)

- 41 Electricity and magnetism
- 42 Optics (*see also* 78)
 - 42.10 Propagation and transmission in homogeneous media
 - 42.20 Propagation and transmission in inhomogeneous media
 - 42.30 Optical information, image formation and analysis
 - 42.40 Holography
 - 42.50 Quantum optics
 - 42.55 Laser processes
 - C Pumping mechanisms
 - E Molecular gas lasers (CO_2 , CO, N_2O , formaldehyde)
 - G Excimer lasers
 - H Atomic, ionic, and other gas lasers
 - M Laser action in liquids and organic dyes
 - P Laser action in semiconductors
 - R Laser action in solid-state lasers
 - T Free-electron lasers
 - 42.60 Laser systems and laser-beam applications
 - B Design of specific laser systems
 - D Laser resonators, cavities, and amplifiers
 - E Laser beam deflection and focusing
 - F Laser beam modulation, mode locking, and tuning
 - 42.65 Nonlinear optics
 - 42.68 Atmospheric optics
 - 42.70 Optical materials
 - 42.80 Optical devices, techniques, and applications (including fiber and integrated optics)
- 43 Acoustics (*see also* 62)

Fluids, plasmas, and electric discharges

- 52 Physics of plasmas and electric discharges

Condensed matter: structure, mechanical and thermal properties

- 61 Structure of liquids and solids; crystallography (*for surface structure, see 68.35; for thin-film structure, see 68.55*)
 - 61.10 Determination of structures
 - 61.12 Neutron determination of structures
 - 61.14 Electron determination of structures
 - 61.16 Other determination of structures
 - 61.20 Liquid structures
 - 61.30 Liquid crystals
 - 61.40 Amorphous and polymer materials, glasses
 - 61.70 Defects in crystals
 - 61.80 Radiation damage and other irradiation effects
- 62 Mechanical and acoustical properties of condensed matter
- 63 Lattice dynamics and crystal statistics
- 64 Phase equilibria, and phase transitions
- 65 Thermal properties of condensed matter
- 66 Transport properties of condensed matter (nonelectronic)
 - 66.30 Diffusion and ionic conduction in solids

Surfaces and interfaces; thin films and whiskers

- 68.10 Fluid surfaces and fluid-fluid interfaces
- 68.15 Liquid thin films
- 68.35 Solid surfaces and solid-solid interfaces (including bicrystals)
- 68.45 Solid-fluid interfaces
- 68.55 Thin films: growth, structure, epitaxy and nonelectronic properties
- 68.65 Layer structures, intercalation compounds, and superlattices: growth, structure, and nonelectronic properties
- 68.70 Whiskers and dendrites: growth, structure, and nonelectronic properties

Condensed matter: electronic structure, electrical, magnetic, and optical properties

- 71 Electron states
- 72 Electronic transport
 - 72.15 Electronic phenomena in metals and alloys
 - 72.20 Conductivity phenomena in semiconductors and insulators
 - 72.40 Photoconduction and photovoltaic effects
 - 72.50 Acoustoelectric effects
 - 72.60 Mixed conductivity and conductivity transitions
 - 72.70 Noise processes and phenomena
- 73 Electronic structure and electrical properties of surfaces, interfaces, and thin films
 - 73.20 Electronic surface states
 - 73.25 Surface conductivity
 - 73.30 Surface double layers, Schottky barriers, and work functions
 - 73.40 Interfaces
 - 73.60 Electronic properties of thin films
- 74 Superconductivity
 - 74.70 Superconducting materials
- 75 Magnetic properties and materials
 - 75.70 Magnetic films and plates
- 76 Magnetic resonances and relaxation; Mössbauer effect
- 77 Dielectric properties and materials
 - 77.55 Dielectric thin films
- 78 Optical properties
 - 78.30 Infrared and Raman spectra
 - 78.65 Optical properties of thin films
 - 78.70 X-ray spectra and positron annihilation
- 79 Electron and ion emission by liquids and solids; impact phenomena
 - 79.20 Impact phenomena (including electron spectra and sputtering)
 - 79.40 Thermionic emission
 - 79.60 Photoemission and photoelectron spectra
 - 79.70 Field emission and field ionization

Cross-disciplinary physics

- 81 Materials science
 - 81.10 Methods of crystal growth and purification
 - 81.15 Methods of thin-film deposition
 - Z Laser deposition methods
 - 81.40 Treatment of materials and its effect on microstructure and properties
 - Z Laser machining
 - 81.60 Corrosion, oxidation, and surface treatments
 - Z Laser techniques, including ablation
- 82 Physical chemistry
 - 82.20 Chemical kinetics and chemical reactions
 - 82.30 Specific chemical reactions; reaction mechanisms
 - 82.40 Chemical kinetics and reactions: special regimes and techniques
 - Z Laser-induced reactions
 - 82.45 Electrochemistry and electrophoresis
 - 82.50 Photochemistry and radiation chemistry
 - 82.65 Surface processes
 - 82.70 Dispersive systems
 - 82.80 Chemical analysis and related physical methods of analysis
- 84 Electromagnetic technology
 - 84.60 Direct energy conversion and energy storage
- 85 Electrical and magnetic devices
 - 85.30 Semiconductor devices
 - 85.40 Integrated electronics
 - 85.60 Photoelectric and optoelectronic devices and systems
 - 85.80 Electrochemical, thermo-EM, and other devices
- 87 Biophysics (biological effects of radiation)

A classified index for Volumes 1-25 can be found in Appl. Phys. 25, 367-453 (1981), one for Volume 26-40 in Appl. Phys. A 40/4 (August 1986), and an earlier index for Volumes 1-15 at the end of Appl. Phys. 15 (May 1978)

Contents of Applied Physics A 63

- Abd El-Rahman AM → El-Nahass MM
 Afonso CN → Starbov N
 Alejos Ó, Francisco C de, Hernández P, Bendimya K, Muñoz JM: Stretched-exponential approach in relaxing systems 471
 Al-Shamery K: Dynamics of photoinduced reactions at oxide surfaces 509
 Alvensleben F von → Chichkov BN
 Andresen HG → Drescher P
 Apparao KVS → Sahoo NK
 Arenholz E → Himmelbauer M
 Arenholz E → Li ST
 Ashkenasi D, Varel H, Rosenfeld A, Noack F, Campbell EEB: Pulse-width influence on the laser-induced structuring of CaF_2 (111) 103
 Aulenbacher K → Drescher P
 Bai HL, Jiang EY, Wang CD: Structural stability of heat-treated Co/C soft X-ray multilayers fabricated by dual-facing-target sputtering 57
 Bao CL → Lu H
 Battaglin G → De Marchi G
 Baturina TI, Borodovski PA, Studenikin SA: Microwave waveguide method for the measurement of electron mobility and conductivity in GaAs/AlGaAs heterostructures 293
 Bäuerle D → Himmelbauer M
 Bäuerle D → Li ST
 Bendimya K → Alejos Ó
 Benfedda M → Fillard JP
 Bennett LS, Lippert T, Furutani H, Fukumura H, Masuhara H: Laser induced microexplosions of a photosensitive polymer 327
 Bennett LS → Lippert T
 Bergmann HW → Körner C
 Bergt M → Götz T
 Bermuth J → Drescher P
 Bertel E, Memmel N: Promoters, poisons and surfactants: Electronic effects of surface doping on metals 523
 Bi Z → Phillips HM
 Blügel S: Magnetically stabilized surface alloys 595
 Bode M → Witt Ch
 Bogomolov VN, Gaponenko SV, Kapitonov AM, Prokofiev AV, Ponyavina AN, Silvanovich NI, Samoilovich SM: Photonic band gap in the visible range in a three-dimensional solid state lattice 613
 Bolse W → Boness JD
 Boness JD, Bolse W, Lieb KP: Ion beam mixing of Pt marker layers in Al 31
 Borodovski PA → Baturina TI
 Bühner C, Holzwarth U, Maier K, Platzek D, Reske J: Positron annihilation in solid, liquid and undercooled melts of $\text{Co}_{80}\text{Pd}_{20}$ 191
 Caccavale F → De Marchi G
 Campbell EEB → Ashkenasi D
 Castagné M → Fillard JP
 Caudano R → Grigorov GI
 Chadderton LT → Fink D
 Chan PW → Ong CW
 Chand S, Kumar J: Current transport in $\text{Pd}_2\text{Si}/\text{n-Si}(100)$ Schottky barrier diodes 171
 Chen Y-F → Sun L
 Cheung JT → Ong CW
 Chichkov BN, Momma C, Nolte S, Alvensleben F von, Tünnermann A: Femtosecond, picosecond and nanosecond laser ablation of solids 109
 Choy CL → Ong CW
 Colbow K → Miremadi BK
 Cueto A del → González Arias A
 Cui YD → Lu H
 Dalchiele EA, Rosolen JM, Decker F: Electrochemically intercalated M_xC_{60} thin films in a solid state cell ($\text{M}=\text{Li}, \text{K}$): Optical and photoelectrochemical characterization 487
 Damborenea J de → Gutiérrez A
 Danzebrink HU → Fillard JP
 De Marchi G, Caccavale F, Gonella F, Mattei G, Mazzoldi P, Battaglin G, Quaranta A: Silver nanoclusters formation in ion-exchanged waveguides by annealing in hydrogen atmosphere 403
 Decker F → Dalchiele EA
 Di Bartolomeo A → Tosto S
 Di Lazzaro P → Tosto S
 Dimitrov VI, D'Haan J, Knuyt G, Quasyhaegens C, Stals LM: A diffusion model of metal surface modification during plasma nitriding 475
 Ding D-S → Sun L
 Dittich Th, Sieber I, Henrion W, Rauscher S, Wanderka N, Rappich J: Selective laser induced melting of ultrathin nanoporous silicon layers 467
 Dix N → Winzer M
 Dolgaev SI, Lyalin AA, Shafeev GA, Voronov VV: Fast etching and metallization of SiC ceramics with copper-vapor-laser radiation 75
 Dombo Th → Drescher P
 Drescher P, Andresen HG, Aulenbacher K, Bermuth J, Dombo Th, Fischer H, Euteneuer H, Faleev NN, Galaktionov MS, Harrach D, Hartmann P, Hoffmann J, Jennewein P, Kaiser KH, Köbis S, Kovalenkov OV, Kreidel HJ, Langbein J, Maevaev YA, Nachtigall Ch, Petri M, Plützer S, Reichert E, Schemies M, Schöpe H-J, Steffens K-H, Steigerwald M, Subashiev AV, Trautner H, Vinokurov DA, Yashin YP, Yavich BS: Photoemission of spinpolarized electrons from strained GaAsP 203
 D'Haan J → Dimitrov VI
 Du JH → Sang H
 Du YW → Sang H
 El-Ariny R → El-Nahass MM
 Ellegaard O → Svendsen W
 El-Nahass MM, Khalifa BA, Abd El-Rahman AM, El-Ariny R: Structural and optical properties of $\text{ZnSe}_x\text{Te}_{1-x}$ solid solutions in thin-film form 81
 Emsermann A → Luft A
 Espinós JP → Leinen D
 Euteneuer H → Drescher P
 Faleev NN → Drescher P
 Fan XJ → Shi Y
 Felsch W → Rose F
 Fernández A → Leinen D
 Fernández Navarro JM → Paje SE
 Feurer T, Langhoff H: A thermal model for the ablation of polymers by lasers and high intensity ion pulses 13
 Fillard JP, Castagné M, Benfedda M, Lahimer S, Danzebrink HU: Virtual photon scattering at subwavelength sized tips 421
 Fink D, Klett R, Müller M, Omichi H, Hosoi F, Vacik J, Hnatowicz V, Chadderton LT: Influence of energetic ions on grafting to polyethylene 441
 Fink R → Umbach E
 Fischer H → Drescher P
 Flores AG → González Arias A
 Föll H → Ottow S
 Francisco C de → Alejos Ó
 Francisco C de → González Arias A
 Frank W → Klemm T
 Franz U → Luft A
 Freiler MB, Shih MC, Kim S, Levy M, Herman IP, Scarmozzino R, Osgood RM Jr.: Pattern transfer and photoluminescence damage assessment of deep-submicrometer features etched by photon-induced cryo-etching 143
 Friessnegg T → Mahony J
 Fromherz P → Lambacher A
 Fukumura H → Bennett LS
 Furutani H → Bennett LS
 Gadag SP, Srinivasan MN: Surface properties of laser processed ductile iron 409
 Galaktionov MS → Drescher P
 Gaponenko SV → Bogomolov VN
 Giuntini JC → Salam F
 Gonella F → De Marchi G
 González Arias A, Cueto A del, Muñoz JM, Francisco C de, Torres L, Flores AG, Zazo M, Iñiguez J: The dilution of silica in a NiZnCo spinel ferrite matrix 453
 González-Elipe AR → Leinen D
 Götz T, Bergt M, Hoheisel W, Träger F, Stuke M: Non-thermal laser-induced desorption of metal atoms with bimodal kinetic energy distribution 315
 Grigorov GI, Grigorov KG, Sporken R, Caudano R: Ion-induced densification of pvd films – a choice of the optimum density of ion bombardment 399
 Grigorov KG → Grigorov GI
 Gromov DG → Pavlov GY
 Gruber M → Stampfl J
 Gu SL → Liu JL
 Guo HX → Shi Y
 Gutiérrez A, Damborenea J de: Laser-surface-alloying of the iron based superalloy Incoloy-800H with Al 461
 Hagemann M, Weber H-J: Are ternary halides useful materials for nonlinear optical applications? 67

- Hagiwara K → Tsunemi A
 Hähner P: Stochastic dislocation patterning during cyclic plastic deformation 45
 Han P → Liu JL
 Harrach D → Drescher P
 Hartmann M → Körner C
 Hartmann P → Drescher P
 Henrion W → Dittrich Th
 Herman IP → Freiler MB
 Hernández P → Alejos Ó
 Himmelbauer M, Arenholz E, Bäuerle D: Single-shot UV-laser ablation of polyimide with variable pulse lengths 87
 Himmelbauer M, Arenholz E, Bäuerle D, Schilcher K: UV-laser-induced surface topology changes in polyimide 337
 Hiraoka H → Kämaier R
 Hnatowicz V → Fink D
 Höfer U: Nonlinear optical investigations of the dynamics of hydrogen interaction with silicon surfaces 533
 Hoffmann HD → Jandeleit J
 Hoffmann J → Drescher P
 Hoheisel W → Götz T
 Holzwarth U → Bühner C
 Hosoi F → Fink D
 Hu LQ → Liu JL
 Huber WM → Li ST

 Ihlemann J → Simon P
 Iníguez J → González Arias A
 Itoh Y → Peng ZL

 Jandeleit J, Urbach G, Hoffmann HD, Treusch H-G, Kreutz EW: Picosecond laser ablation of thin copper films 117
 Jennewein P → Drescher P
 Ji M → Jin S
 Jiang EY → Bai HL
 Jin S, Ji M, Xue G: Electrochemical fabrication of a novel conducting polythiophene film junction 397
 Joshi MP → Mishra SR

 Kaiser KH → Drescher P
 Kang YQ, Zheng JH, Tan HS, Ng SC: Charge-state effects of deep centres in semiconductors on non-radiative capture of carriers by multiphonon processes 37
 Kapitonov AM → Bogomolov VN
 Kämaier R, Lätsch S, Hiraoka H: Irradiation of solid C₆₀ films with pulsed UV-laser-light: Fabrication of a periodic submicron C₆₀ structure and transformation of C₆₀ into a different carbon phase 305
 Kaspar J → Luft A
 Kästner M → Voigtländer B
 Kerrec O → Yavaş O
 Khalifa BA → El-Nahass MM
 Kim S → Freiler MB
 Kleiber M → Winzer M
 Klemm T, Frank W: Void ordering in hexagonal close-packed metals 19
 Klett R → Fink D
 Knuyt G → Dimitrov VI
 Köbis S → Drescher P
 Kögel G: Positron diffusion in solids and the reconstruction of inhomogeneous defect distributions from lifetime measurements 227
 Kolednik O → Stampfl J
 Körner C, Mayerhofer R, Hartmann M, Bergmann HW: Physical and material aspects in using visible laser pulses of nanosecond duration for ablation 123
 Kovalenkov OV → Drescher P
 Kowalski M → Strzałkowski I
 Krastev V → Kuneva M
 Kreidel HJ → Drescher P
 Kreutz EW → Jandeleit J
 Kučirková A, Navrátil K, Pajasová L, Vorlíček V: Influence of oxygen concentration on optical properties of semi-insulating polycrystalline silicon films 495
 Kudryashova EB → Pavlov GY
 Kumar J → Chand S
 Kuneva M, Krastev V: Proton exchanged LiNbO₃: XPS, IR and optical study 391

 Lahimer S → Fillard JP
 Lam SK → Ong CW
 Lambacher A, Fromherz P: Fluorescence interference-contrast microscopy on oxidized silicon using a monomolecular dye layer 207
 Langbein J → Drescher P
 Langhoff H → Feurer T
 Lätsch S → Kämaier R
 Lehmann O, Stuke, M: High-rate laser-direct-write dry etching of titanium 139
 Lehmann V → Ottow S
 Lei CH → Shi Y
 Leinen D, Fernández A, Espinós JP, González-Elipe AR: Chemical effects in TiO₂ and titanates due to bombardment with Ar⁺ and O₂⁺ ions of different energies (3.5–10 keV) 237
 Lengfellner H → Li ST
 Levy M → Freiler MB
 Li Q → Sang H
 Li SQ → Peng ZL
 Li ST, Ritzer A, Arenholz E, Bäuerle D, Huber WM, Lengfellner H, Prettl W: Step-like growth of Bi₂Sr₂CaCu₂O₈ films on off-axis oriented (001) SrTiO₃ 427
 Li Y → Phillips HM
 Li ZF, Yang ZY, Xiao RF: Visible photoluminescence from hydrogenated amorphous carbon films prepared by pulsed laser ablation of polymethyl methacrylate (PMMA) 243
 Lieb KP → Boness JD
 Lippert T, Bennett LS, Nakamura T, Niino H, Ouchi A, Yabe A: Comparison of the transmission behavior of a triazeno-polymer with a theoretical model 257
 Lippert T → Bennett LS
 Liu JL, Shi Y, Wang F, Lu Y, Zhang R, Gu SL, Han P, Hu LQ, Zheng YD: Realization of silicon quantum wires by selective chemical etching and thermal oxidation 371
 Llopis J → Paje SE
 Lohstroh W → Rose F
 Lu H, Shen DH, Bao CL, Cui YD, Qin J: Auger electron spectroscopy study on the Cr/Al₂O₃ interfacial reactions 277
 Lu Y → Liu JL
 Lu Y-F, Ye K-D: External-field-controlled laser wet etching of polycrystalline Al₂O₃/TiC 283
 Lu Z-H → Sun L
 Luft A, Franz U, Emsermann A, Kaspar J: A study of thermal and mechanical effects on materials induced by pulsed laser drilling 93
 Lyalin AA → Dolgaev SI

 Mahony J, Friessnegg T, Tessaro G, Mascher P, Puff W: Transmission of positrons with a β⁺ energy distribution through thin films 299
 Maier K → Bühner C
 Mamaev YA → Drescher P
 Mascher P → Mahony J
 Masuhara H → Bennett LS
 Mattei G → De Marchi G
 Matz R → Weber H
 Matzdorf R: UV-photoelectron spectroscopy at highest resolution – direct access to lifetime effects in solids? 549
 Mayerhofer R → Körner C
 Mazzoldi P → De Marchi G
 Mazzone AM: Molecular dynamics simulations of sequential deposition of metallic superlattices 217
 Mehendale SC → Mishra SR
 Memmel N → Bertel E
 Metev S → Nowak R
 Meyer G, Zöphel S, Rieder KH: Manipulation of atoms and molecules with a low temperature scanning tunneling microscope 557
 Ming N-B → Sun L
 Miremadi BK, Singh RC, Morrison RS, Colbow K: A highly sensitive and selective hydrogen gas sensor from thick oriented films of MoS₂ 271
 Mishra SR, Rawat HS, Joshi MP, Mehendale SC: On the contribution of nonlinear scattering to optical limiting in C₆₀ solution 223
 Missana T → Starbov N
 Miyamoto Y → Tsunemi A
 Momma C → Chichkov BN
 Morrison RS → Miremadi BK
 Müller M → Fink D
 Muñoz JM → Alejos Ó
 Muñoz JM → González Arias A

 Nachtigall Ch → Drescher P
 Nagasaka K → Tsunemi A
 Nakamura T → Lippert T
 Navrátil K → Kučirková A
 Neumann G, Tölle V: Application of the modified electrostatic model to the impurity diffusion in nickel 377
 Ng SC → Kang YQ
 Ni G → Sang H
 Niino H → Lippert T
 Noack F → Ashkenasi D
 Nolte S → Chichkov BN
 Nowak R, Metev S: Thermochemical laser etching of stainless steel and titanium in liquids 133

 Ollacizqueta MA → Starbov N
 Oltra R → Yavaş O
 Omichi H → Fink D
 Ong CW, Zhao X-A, Cheung JT, Lam SK, Chan PW, Choy CL: Parametric dependence of the properties of pulsed-laser-deposited diamond-like carbon films 287
 Osgood RM Jr. → Freiler MB
 Ottow S, Lehmann V, Föll H: Development

- of three-dimensional microstructure processing using macroporous *n*-type silicon 153
- Ouchi A → Lippert T
- Pajasová L → Kučírková A
- Paje SE, Llopis J, Villegas MA, Fernández Navarro JM: Photoluminescence of a silver-doped glass 431
- Pavlov GY, Pugachevich VP, Gromov DG, Kudryashova EB: Arc plasma jet cleaning of the silicon surface before CoSi_2/Si contact formation 9
- Peng ZL, Itoh Y, Li SQ, Wang SJ: Study of the ionic transport in polymer electrolyte using positron lifetime distribution method 267
- Petri M → Drescher P
- Phillips HM, Li Y, Bi Z, Zhang B: Reactive pulsed laser deposition and laser induced crystallization of SnO_2 transparent conducting thin films 347
- Platzek D → Bühner C
- Plützer S → Drescher P
- Ponyavina AN → Bogomolov VN
- Prettl W → Li ST
- Prokofiev AV → Bogomolov VN
- Puff W → Mahony J
- Pugachevich VP → Pavlov GY
- Qin J → Lu H
- Quaranta A → De Marchi G
- Quasyhaegens C → Dimitrov VI
- Rappich J → Dittrich Th
- Rauscher S → Dittrich Th
- Rawat HS → Mishra SR
- Reichert E → Drescher P
- Reske J → Bühner C
- Rieder KH → Meyer G
- Ritzer A → Li ST
- Rose F, Schulte O, Schaaf P, Lohstroh W, Felsch W: Structural and magnetic properties of La/Fe multilayers 183
- Rosenfeld A → Ashkenasi D
- Rosolen JM → Dalchiele EA
- Sahoo NK, Apparao KVS: Process-parameter optimization of Sb_2O_3 films in the ultraviolet and visible region for interferometric applications 195
- Saito N → Tsunemi A
- Salam F, Giuntini JC, Soulayman SS, Zanchetta JV: Survey of the pre-factor of the power-law frequency dependence in the silver conducting chalcogenide glasses 447
- Sameshima T, Takashima N: Optical characterization of laser-induced crystallized silicon films 333
- Samoilovich SM → Bogomolov VN
- Sang H, Ni G, Du JH, Xu N, Zhang SY, Li Q, Du YW: Preparation and microstructures of CoAg granular films with giant magnetoresistance 167
- Scarmozzino R → Freiler MB
- Schaaf P → Rose F
- Schemies M → Drescher P
- Scherer S → Stampfl J
- Schilcher K → Himmelbauer M
- Schindler K-M: Energy scan photoelectron diffraction: an integrated method for adsorbate structure determinations 605
- Schöpe H-J → Drescher P
- Schou J → Svendsen W
- Schulte O → Rose F
- Shafeev GA → Dolgaev SI
- Shen DH → Lu H
- Shi Y, Xiong CM, Wang XS, Lei CH, Guo HX, Fan XJ: Structure and electrical characteristics of ICB D C_{60} films 353
- Shi Y → Liu JL
- Shih MC → Freiler MB
- Sieber I → Dittrich Th
- Silvanovich NI → Bogomolov VN
- Simon P, Ihlemann J: Machining of submicron structures on metals and semiconductors by ultrashort UV-laser pulses 505
- Singh RC → Miremadi BK
- Sokolowski M → Umbach E
- Soulayman SS → Salam F
- Sporken R → Grigorov GI
- Srinivasan MN → Gadag SP
- Stals LM → Dimitrov VI
- Stampfl J, Scherer S, Gruber M, Kolednik O: Reconstruction of surface topographies by scanning electron microscopy for application in fracture research (with 3D spectrales) 341
- Starbov N, Missana T, Afonso CN, Starbova K, Ollacarizqueta MA: Mixing kinetics and write-once optical recording characteristics of Sb/Se bilayer films 161
- Starbova K → Starbov N
- Steffens K-H → Drescher P
- Steigerwald M → Drescher P
- Strzałkowski I, Kowalski M: Positive and negative charge creation in the SiO_2 film of a MOS transistor by high electric field stress 179
- Studenikin SA → Baturina TI
- Stuke M → Götz T
- Stuke M → Lehmann O
- Subashiev AV → Drescher P
- Sun L, Chen Y-F, Yu T, Ming N-B, Ding D-S, Lu Z-H: (001) textured PbTiO_3 thin films grown on redoping *n*-Si by metalorganic chemical vapor deposition under reduced pressure 381
- Suto O → Tsunemi A
- Svendsen W, Ellegaard O, Schou J: Laser ablation deposition measurements from silver and nickel 247
- Takashima N → Sameshima T
- Tamura M: Two groups of misfit dislocations in GaAs on Si 359
- Tan HS → Kang YQ
- Tashiro H → Tsunemi A
- Tessaro G → Mahony J
- Tölle V → Neumann G
- Torres L → González Arias A
- Tosto S, Di Bartolomeo A, Di Lazzaro P: Surface ablation by excimer laser irradiation of Ti and Ti6Al4V alloy 385
- Träger F → Götz T
- Trautner H → Drescher P
- Treusch H-G → Jandeleit J
- Tsunemi A, Hagiwara K, Saito N, Nagasaka K, Miyamoto Y, Suto O, Tashiro H: Complete removal of paint from metal surface by ablation with a TEA CO_2 laser 435
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- Voronov VV → Dolgaev SI
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- Weimann G → Weber H
- Wiesendanger R → Winzer M
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- Xiong CM → Shi Y
- Xu N → Sang H
- Xue G → Jin S
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- Ye K-D → Lu Y-F
- Yu T → Sun L
- Yuan R-K → Wang Y-B
- Zanchetta JV → Salam F
- Zazo M → González Arias A
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